

Message Text

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ACTION SCI-06

INFO OCT-01 EUR-25 ISO-00 ACDA-19 CIAE-00 INR-10 IO-14

L-03 NSAE-00 NSC-10 RSC-01 FEA-02 EB-11 TRSE-00 OMB-01

SS-20 NSF-04 DODE-00 PA-04 USIA-15 PRS-01 SPC-03 PM-07

DRC-01 /158 W

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R 241433Z JAN 74

FM AMEMBASSY LONDON

TO SECSTATE WASHDC 7355

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USDOC WASHDC

USAEC WASHDC

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E.O. 11652: N/A

TAGS: ENRG TECH UK

SUBJECT: HMG CHIEF SCIENTIFIC ADVISER'S CONCLUSIONS ON
LWR SAFETY

REF: LONDON 01068

1. FOLLOWING, ACCORDING TO PRESS ACCOUNTS, ARE THE CONCLUSIONS OF SIR ALAN COTTRELL, CHIEF SCIENTIFIC ADVISER TO HMG AND AN EMINENT METALLURGIST, PRESENTED IN MEMORANDUM FORM TO THE HOUSE OF COMMONS ENERGY RESOURCES SUB-COMMITTEE (PGH 4 REFTEL):

A. RAPID FRACTURE FROM LARGE CRACKS OR DEFECTS IN THICK SECTIONS, IS IN PRINCIPLE POSSIBLE IN STEEL PRESSURE VESSELS UNDER OPERATIONAL CONDITIONS.

B. IN LWR VESSELS THE ESTIMATED CRITICAL CRACK SIZE FOR UNSTABLE GROWTH IS SMALLER THAN THE WALL THICKNESS SO THAT THE "LEAK BEFORE BREAK" SAFETY FEATURE IS UNAVAILABLE.

C. IN THESE CIRCUMSTANCES, THE SECURITY OF AN LWR VESSEL AGAINST FRACTURE DEPENDS ON THE MAINTENANCE OF RIGOR-
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OUS MANUFACTURING AND QUALITY CONTROL STANDARDS AND ON

THOROUGH, EFFECTIVE AND REGULARLY REPEATED EXAMINATION OF THE VESSEL BY THE ULTRASONIC CRACK-DETECTION TECHNIQUE.

D. THE POSSIBLE GRADUAL GROWTH OF SMALL CRACKS IN HIGHLY STRESSED REGIONS BY AGING AND CORROSION EFFECTS DURING SERVICE NEEDS FURTHER SCIENTIFIC INVESTIGATION, AS ALSO DOES THE EFFECT OF THERMAL SHOCK FROM EMERGENCY COOLING WATER IN A LOSS OF COOLANT INCIDENT.

2. THE OFFICIAL SUB-COMMITTEE MINUTES OF EVIDENCE FOR HEARINGS HELD ON DECEMBER 11 AND 13 (LONDON 14797) ARE NOW AVAILABLE. AN AIRGRAM SUMMARY FOLLOWS AND COPIES OF TEXTS WILL BE AIRPOUCHED TO ADDRESSEES. ANNENBERG

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Decaption Note:
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Disposition Comment:
Disposition Date: 01 JAN 1960
Disposition Event:
Disposition History: n/a
Disposition Reason:
Disposition Remarks:
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Drafter: n/a
Enclosure: n/a
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